IN THE CLAIMS

Please amend the claims as follows.

1-24. (Cancelled)

25. (Currently Amended) A method for classifying vehicle occupants by measuring seat occupant weight comprising the steps of:

(a) mounting a plurality of sensors within a seat structure;

(b) generating a plurality of occupant weight signals from the sensors in response to a weight force applied to the seat structure;

(c) mapping the occupant weight signals from the sensors into a virtual matrix; and

(d) determining seat occupant weight based on output from the virtual matrix.

26. (Previously Presented) The method according to claim 25 including (e) classifying each seat occupant into one of a plurality of predetermined occupant weight classes based on at least the output from the virtual matrix.

27. (Previously Presented) The method according to claim 26 including (f) providing seat occupant weight classification to a restraint control.

28. (Previously Presented) The method according to claim 25 wherein step (a) further includes mounting the sensors in a non-symmetrical pattern.

29. (Previously Presented) The method according to claim 25 wherein step (a) further includes mounting the sensors in a symmetrical pattern.

30. (Previously Presented) The method according to claim 25 wherein step (c) further includes generating the virtual matrix to define a theoretical optimal pattern having a theoretical optimal number of seat sensor positions.

31. (Currently Amended) The method according to claim 30 including providing hardware for receiving the occupant weight signals, storing the virtual matrix, and mapping the occupant weight signals into the virtual matrix.

32. (Previously Presented) The method according to claim 31 wherein step (a) includes mounting the sensors into one of multiple different seat sensor configurations and further including using common hardware for each different seat sensor configuration.

33. (Previously Presented) The method according to claim 31 wherein step (a) includes mounting the sensors into one of multiple different seat sensor configurations and further including using identical hardware for each different seat sensor configuration.

34. (Previously Presented) The method according to claim 25 wherein the virtual matrix comprises a theoretical sensor configuration stored within a control unit.

35. (Currently Amended) A system for determining seat occupant weight comprising:

a plurality of sensors mounted within a seat structure for generating a plurality of occupant weight signals in response to a weight force applied to said seat structure; and

a control unit electrically connected to said sensors for receiving said occupant weight signals and mapping said occupant weight signals from said sensors into a virtual matrix to generate an output signal representing seat occupant weight.

36. (Previously Presented) A system according to claim 35 wherein said sensors are mounted within said seat structure in one of a plurality of seat sensor configurations and wherein said control unit includes hardware that is common to each of said seat sensor configurations.

37. (Previously Presented) A system according to claim 35 wherein said control unit includes electrically erasable programmable read only memory.

38. (Currently Amended) A system according to claim 35 wherein said control unit includes a printed circuit board having a plurality of connectors for attachment to said sensors and a central processing unit for generating said virtual matrix and mapping said occupant weight signals from said sensors into said virtual matrix.

39. (Previously Presented) A system according to claim 35 including a restraint control wherein said output signal is classified into one of a plurality of predetermined occupant weight classes and transmitted to said restraint control.

40. (Currently Amended) A system according to claim 35 wherein [the] said virtual matrix comprises a theoretical sensor configuration stored within said control unit and [including] includes an optimal number of theoretical sensor positions.

41. (Previously Presented) A method for classifying vehicle occupants by measuring seat occupant weight comprising the steps of:

(a) supporting a plurality of sensors with a seat structure;

(b) generating a weight signal from each sensor in response to a weight force applied to the seat structure;

(c) mapping the weight signals from the sensors into a virtual matrix defining a theoretical sensor configuration; and

(d) determining weight on the seat structure based on output from the virtual matrix.

42. (Previously Presented) The method according to claim 41wherein step (a) includes mounting the sensors in a predetermined sensor configuration.

43. (Previously Presented) The method according to claim 42 wherein the predetermined sensor configuration is identical to the theoretical sensor configuration.

44. (Previously Presented) The method according to claim 42 wherein the predetermined sensor configuration is different than the theoretical sensor configuration.

45. (Previously Presented) The method according to claim 42 wherein the predetermined sensor configuration comprises a plurality of discrete sensor locations and step (b) includes generating a weight signal from each discrete sensor location.

46. (Previously Presented) The method according to claim 45 wherein the theoretical sensor configuration comprises a plurality of virtual sensor positions.

47. (Previously Presented) The method according to claim 46 wherein step (c) includes mapping each one of the weight signals into one of the virtual sensor positions.

48. (Previously Presented) The method according to claim 47 wherein step (c) includes mapping each one of the weight signals into a virtual sensor position that corresponds generally to a location of the discrete sensor location from which the weight signal is generated.

49. (Previously Presented) The method according to claim 49 wherein the virtual matrix includes a greater number of virtual sensor positions than discrete sensor locations and step (c) includes determining which virtual sensor positions do not have corresponding mapped weight signals and assigning a value for each of the remaining virtual sensor positions based on weight

signal data from discrete sensor locations surrounding each of the remaining virtual sensor positions.